

BUILDING 74 FIRE ALARM LBNL SEISMIC PHASE 2

1 Cyclotron Road, Berkeley, California 94720

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CODE SUMMARY

APPLICABLE CODES:

2007 California Building Standards Administrative Code Part 1, Title 24, California Code of Regulations (CCR)

2007 California Electrical Code

- 2007 California Building Code Part 2, Title 24, CCR (2006 IBC and 2007 California Amendments)
- Part 3, Title 24, CCR (2005 NEC and 2007 California Amendments)
- 2007 California Mechanical Code Part 4, Title 24, CCR (2006 UMC and 2007 California Amendments)
- 2007 California Fire Code Part 9, Title 24, CCR (2006 IFC and 2007 California Amendments) 2007 NFPA 72, National Fire Alarm Code And All Amendments and Additions to the Above

MXL GENERAL WIRING GUIDELINES

1. ALL WIRING MUST COMPLY WITH LOCAL AND CALIFORNIA ELECTRICAL CODES. ALL WIRING MUST BE DONE AS DESCRIBED IN NOTES 2 & 6 BELOW, TO OBTAIN SAFE AND PROPER SYSTEM OPERATION. 2. EARTH GROUND THE MXL ENCLOSURE PROPERLY; SEE LATEST EDITION OF NATIONAL ELECTRICAL CODES FOR APPROVED METHODS. CONDUIT GROUND IS NOT ADEQUATE. 3. SEPARATE ALL WIRING FOR INITIATING DEVICES (i.e., DETECTORS, MANUAL STATIONS, TRI MODULES, ETC) FROM

ALL OTHER WIRING IN THE MXL ENCLOSURE. 4. INSULATE ALL CABLE DRAIN WIRES FROM ANY CONDUIT OR OTHER EARTH GROUNDED ELECTRICAL BOX, INCLUDING THOSE IN THE MXL ENCLOSURE. 5. CONNECT SHIELD CABLE WIRE ONLY AT SPECIFIED LOCATION INSIDE THE MXL ENCLOSURE.

6. EARTH GROUND ALL CONDUIT RUNS THROUGHOUT THE INSTALLATON. 7. LINE RESISTANCE IS MEASURED AT THE ALD-21 MODULE SCREW TERMINALS. THE END OF THE LOOP MUST BE SHORTED, THE ALD-21 MODULE MUST BE REMOVED FROM THE SCREW TERMINALS, AND NO ADDRESSABLE DEVICES

8. LINE CAPACITANCE IS MEASURED AT THE ALD-2I MODULE SCREW TERMINALS THE END OF THE LOOP(S) MUST BE OPEN. THE ALD-21 MODULE MUST BE REMOVED FROM THE SCREW TERMINALS AND NO ADDRESSABLE DEVICES MAY BE INSTALLED.

9. ALL 110/120 VAC CIRCUITS SHOULD BE INSTALLED IN DEDICATED CONDUIT. 10. ALL INITIATING CIRCUITS ARE RATED POWER LIMITED AND SHOULD BE WIRED IN ACCORDANCE WITH APPLICABLE

11. UNDERGROUND WIRING IS PERMISSIBLE IF ALL NEC WIRING REQUIREMENTS ARE MET. 12. OVERHEAD OR EXTERIOR WIRING IS NOT RECOMMENDED

CLASS A WIRING

CLASS A WIRING PER NFPA 72 2007 EDITION / CHAPTER 6.4.2.2.2*

ALL STYLES OF CLASS A CIRCUITS USING PHYSICAL CONDUCTORS (FOR EXAMPLE, METALLIC, OPTICAL FIBER) SHALL BE INSTALLED SUCH THAT THE OUT GOING AND RETURN CONDUCTORS, EXITING FROM AND RETURNING TO THE CONTROL UNIT, RESPECTIVELY, ARE ROUTED SEPARATELY. THE OUTGOING AND RETURN (REDUNDANT) CIRCUIT CONDUCTORS SHALL NOT BE RUN IN THE SAME CABLE ASSEMBLY (THAT IS, MULTICONDUCTOR CABLE), ENCLOSURE, OR RACEWAY.

EXCEPTION: THE OUTGOING AND RETURN (REDUNDANT) CIRCUIT CONDUCTORS SHALL BE PERMITTED TO BE RUN IN THE SAME CABLE, ASSEMBLY, ENCLOSURE, OR RACEWAY UNDER ANY OF THE FOLLOWING CONDITIONS: (1) FOR A DISTANCE NOT TO EXCEED 10 FT (3 M) WHERE THE OUTGOING AND RETURN CONDUCTORS ENTER OR EXIT THE INITIATING DEVICE, NOTIFICATION APPLIANCE, CONTROL UNIT ENCLOSURES.

(2) SINGLE CONDUIT/RACEWAY DROPS TO INDIVIDUAL DEVICES OR APPLIANCES. (3) SINGLE CONDUIT/RACEWAY DROPS TO MULTIPLE DEVICES OR APPLIANCES INSTALLED WITHIN A SINGLE

ROOM NOT EXCEEDING 1000 FT² (92.9 M²) IN AREA SHALL BE PERMITTED. CLASS A WIRING PER NFPA 72 2007 EDITION / ANNEX A.6.4.2.2.2

A GOAL OF 6.4.2.2.2 IS TO PROVIDE ADEQUATE SEPARATION BETWEEN THE OUTGOING AND RETURN CABLES. THIS SEPARATION IS REQUIRED TO HELP ENSURE PROTECTION OF THE CABLES FROM PHYSICAL DAMAGE. THE RECOMMENDED MINIMUM SEPARATION TO PREVENT PHYSICAL DAMAGE IS 1 FT (0.305 m) WHERE THE CABLE IS INSTALLED VERTICALLY AND 4 FT (1.22 m) WHERE THE CABLE INSTALLED HORIZONTALLY.

SCOPE OF WORK

GENERAL ELECTRICAL NOTES

1. ALL WIRING AND INSTALLATION MUST CONFORM WITH PROJECT SPECIFICATIONS, APPLICABLE CODE SUMMARIES AND

2. SMOKE DETECTORS SHOULD NOT BE LOCATED IN A DIRECT AIRFLOW NOR CLOSER THAN 3 FEET (1 m) FROM AN AIR

4. ALL CONVENTIONAL ZONE CIRCUIT MUST BE SUPERVISED. HENCE, NO PARALLEL BRANCHING OF WIRES IS PERMISSIBLE

5. ALL 24 VDC WIRE TO BE INSTALLED IN DEDICATED CONDUIT SEPARATE FROM 120 VAC WIRING, IN ACCORDANCE WITH

6. CONDUIT SIZING TO BE DETERMINED BY W. BRADLEY ELECTRIC, INC. AND SHALL CONFORM TO CONDUIT FILL CAPACITIES

7. DO NOT APPLY 120 VAC POWER TO CONTROL PANEL UNTIL A SIEMENS INDUSTRY, INC. FIRE SAFETY TECHNICIAN HAS

8. ALL PLUG-IN TYPE DETECTORS REQUIRE A 4" OCTAGONAL, 1-1/2" OR DEEPER MOUNTING BOX. REFER TO DETAIL

9. 120 VAC INPUT CONNECTIONS TO THE FIRE ALARM CONTROL PANEL SHALL BE ON DEDICATED BRANCH CIRCUIT(S). THE CIRCUIT(S) AND CONNECTIONS SHALL BE MECHANICALLY PROTECTED. CIRCUIT DISCONNECTION SHALL HAVE A RED MARKING. SHALL BE ACCESSIBLE ONLY TO AUTHORIZED PERSONNEL AND SHALL BE IDENTIFIED AS FIRE ALARM CIRCUIT CONTROL. THE LOCATION OF THE CIRCUIT DISCONNECTING BREAKER SHALL BE PERMANENTLY IDENTIFIED AT THE FIRE ALARM

10. INSTALLATION MATERIALS SUCH AS CONDUITS, FITTINGS, JUNCTION BOXES, TERMINAL CABINETS, PULL BOXES, HANGERS, ETC. ARE SUPPLIED AND INSTALLED BY W. BRADLEY ELECTRIC, INC. ALL WIRING IS TO BE FROM DEVICE TERMINAL TO

11. ANY DEVIATION FROM THE DESIGN AND LOCATION OF EQUIPMENT SHOWN MUST FIRST HAVE A WRITTEN APPROVAL FROM SIEMENS INDUSTRY, INC. FIRE SAFETY. ANY DEVIATION FROM DESIGN MUST ALSO BE INDICATED ON SIEMENS INDUSTRY, INC. FIRE SAFETY SHOP DRAWINGS (BLUEPRINTS) AND RETURNED TO SIEMENS INDUSTRY, INC. FIRE SAFETY AT

b) WIRE RUNS HAVE BEEN ENGINEERED TO COMPLY WITH SPECIFIC VOLTAGE DROP REQUIREMENTS. ANY DEVIATION FROM SHOWN WIRE RUNS WHICH RESULTS IN NON-COMPLIANCE WITH VOLTAGE DROP REQUIREMENTS SHALL BE THE SOLE

c) THESE SUBMITTED SHOP DRAWINGS ARE COMPLETE. SIEMENS INDUSTRY, INC. FIRE SAFETY SHALL NOT BEAR ANY

13. ALL SMOKE DETECTORS (NEW OR EXISTING) SHALL BE PROTECTED FROM DUST AND DEBRIS DURING CONSTRUCTION. SMOKE-SENSING DETECTORS SHALL NOT BE INSTALLED UNTIL AFTER THE CONSTRUCTION CLEANUP OF ALL TRADES IS COMPLETE AND FINAL. PER NFPA 72 (CHAPTER 5.7.1.11) 2007 EDITION. Exception: WHERE REQUIRED BY THE AUTHORITY

HAVING JURISDICTION FOR PROTECTION DURING CONSTRUCTION. DETECTORS THAT HAVE BEEN INSTALLED DURING CONSTRUCTION AND FOUND TO HAVE A SENSITIVITY OUTSIDE THE LISTED AND MARKED SENSITIVITY RANGE SHALL BE

14. IF REQUIRED BY THE OWNER OR CONTRACT, LABELING OF FIELD DEVICES SHALL BE SUPPLIED BY W. BRADLEY

15. ACCEPTANCE TESTING SHALL COMPLY WITH NFPA 72: (CHAPTER 10) AND SHALL INCORPORATE 100% OF ALL DEVICES

AFFECTED BY THIS MODIFICATION AS WELL AS 10% OF INITIATING DEVICES NOT DIRECTLY AFFECTED UP TO A MAXIMUM OF

18. A LISTED RELAY OR OTHER LISTED APPLIANCE CONNECTED TO THE FIRE ALARM SYSTEM USED TO INITIATE CONTROL OF PROTECTED PREMISES FIRE SAFETY FUNCTIONS SHALL BE LOCATED WITHIN 3 FT OF THE CONTROLLED CIRCUIT OR

12. THE DRAWINGS REPRESENT A SIEMENS INDUSTRY, INC. FIRE SAFETY ENGINEERED FIRE ALARM SYSTEM PER

a) W. BRADLEY ELECTRIC, INC. SHALL NOT DEVIATE BY NOT MORE THAN 5% FROM THE FINAL APPROVED

SUPPLY DIFFUSER OR RETURN AIR OPENING. PER NFPA 72 (CHAPTER A-5.7.4.1) 2007 EDITION.

AS PER REQUIREMENTS OF CURRENT EDITIONS OF NATIONAL AND STATE ELECTRICAL CODES.

INSPECTED ALL SYSTEM WIRING CONNECTIONS AND HAS APPROVED THE SYSTEM TO BE TURNED ON.

3. WHEN INSTALLING INITIATING AND AUDIBLE DEVICES, POLARITY MUST BE OBSERVED.

REQUIREMENTS ADOPTED BY LBNL.

CURRENT NATIONAL AND STATE ELECTRICAL CODES.

DRAWINGS FOR DEVICE WIRING AND MOUNTING CONDITIONS.

DEVICE TERMINAL SPLICES AND WIRE NUTS ARE NOT ACCEPTABLE.

CONTRACTUAL DESIGN DRAWINGS AND SPECIFICATIONS.

RESPONSIBILITY OF THE W. BRADLEY ELECTRIC, INC.

ADDITIONAL COSTS OF RE-ENGINEERING RECORD DRAWINGS (AS-BUILTS).

CLEANED OR REPLACED AT AN ADDITIONAL COST TO W. BRADLEY ELECTRIC, INC.

16. GROUND WIRE SHALL RUN THROUGHOUT ALL FIRE ALARM CONDUIT SYSTEM. 17. DO NOT INSTALL ADDRESSABLE DEVICES PRIOR TO PROGRAMMING. SEE NOTE 13.

TIME OF JOB COMPLETION.

- THIS DESIGN PROVIDES A FIRE DETECTION AND FIRE ALARM SYSTEM FOR BUILDING 74. THE DESIGN PROVIDES A NEW SIEMENS MXL FIRE ALARM CONTROL UNIT AS THE BUILDING'S CONTROL UNIT (NO EQUAL WILL BE ACCEPTED), PHOTOELECTRIC SMOKE DETECTORS (FOR PROTECTION OF THE AREAS SHOWN IN THE DRAWINGS), DUCT-TYPE SMOKE DETECTORS (FOR BUILDING HVAC FAN SHUTDOWN), WATERFLOW AND VALVE POSITION SUPERVISION, MANUAL FIRE ALARM PULL STATIONS, AUDIBLE/VISUAL, AND VISUAL NOTIFICATION APPLIANCES. ALL INITIATING DEVICES & NOTIFICATION APPLIANCES SHALL BE COMPATIBLE WITH THE NEW SIEMENS FIRE ALARM CONTROL UNIT (FACP). THE DEVICES AND APPLIANCES SHALL BE PROVIDED AND INSTALLED AS INDICATED IN THE DRAWINGS, NATIONAL FIRE PROTECTION ASSOCIATION (NFPA) 72, NATIONAL FIRE ALARM CODE, AND THE SYSTEM SHALL BE IN ACCORDANCE WITH THE MANUFACTURER'S LISTINGS AND APPROVALS.
- 2. ALL FIRE ALARM SYSTEM RACEWAY (E.G. CONDUIT) SHALL BE PROVIDED IN ACCORDANCE WITH THE UNIVERSITY'S STANDARDS AND THESE CONTRACT DOCUMENTS. ALL CONDUIT SHALL BE ROUTED CONCEALED IN FINISHED AREAS, UNLESS ACCEPTED BY THE UNIVERSITY. CONDUIT ROUTED ABOVE DROP CEILING SYSTEMS SHALL BE INSTALLED AT A HEIGHT PERMITTING THE EASY REMOVAL OF THE CEILING TILE (E.G. CONDUIT SHALL NOT BE INSTALLED ABOVE THE TILE TO PREVENT EASY LIFTING FOR ACCESS). EXPOSED CONDUIT IN FINISHED AREAS SHALL BE PAINTED. CONDUIT IN UNFINISHED AREAS MAY BE
- 3. THE RISER DIAGRAMS ARE DIAGRAMMATIC AND REPRESENT FEASIBLE CONNECTIVITY. CONNECTIVITY MAY BE MODIFIED TO SUIT FIELD CONDITIONS PROVIDED THAT THE NOTIFICATION APPLIANCE AND SIGNALING LINE CIRCUIT LOADS DO NOT EXCEED THOSE SPECIFIED IN THE LISTINGS AND APPROVALS FOR EACH MANUFACTURER'S PIECE OF EQUIPMENT.
- 4. THE FACP SHALL BE LOCATED AS SHOWN IN THE DRAWING (1ST FLOOR ELECTRICAL ROOM). THE MXL SHALL BE INSTALLED AT A HEIGHT SUCH THAT THEIR VISUAL DISPLAYS ARE AT A HEIGHT OF 5'-6". THE MXL SHALL COMMUNICATE TO AN EXISTING MXL CONTROL UNIT LOCATED IN BUILDING 84 VIA A SIEMENS NET 7 NETWORK INTERFACE CARD IN THE EXISTING MXI CONTROL UNIT. THE SUBCONTRACTOR SHALL PROVIDE THE NECESSARY AND APPROPRIATE COMMUNICATION CABLING BETWEEN THE NEW MXL CONTROL UNIT AND THE EXISTING MXL CONTROL UNIT IN BUILDING 84. THE UNIVERSITY WILL PROVIDE FOR THE CONNECTION OF THE NEW DATA CABLES TO THE EXISTING MXL CONTROL UNIT.
- . ANY FIRE ALARM SIGNAL SHALL CAUSE ALL AUDIBLE NOTIFICATION APPLIANCES TO OPERATE CONTINUOUSLY IN ACCORDANCE WITH THE UNIVERSITY'S REQUIREMENTS. ANY FIRE ALARM SIGNAL SHALL ALSO CAUSE AN ALARM SIGNAL TO BE TRANSMITTED TO THE UNIVERSITY'S RECEIVER.
- 6. ANY SUPERVISORY OR TROUBLE SIGNAL SHALL CAUSE A LOCAL ALARM AT THE FACU TO OPERATE. ANY SUPERVISORY OR TROUBLE SIGNAL SHALL ALSO CAUSE A SUPERVISORY/TROUBLE SIGNAL TO BE TRANSMITTED TO THE UNIVERSITY'S RECEIVER VIA THE MXL IN BUILDING 84.
- 7. ALL WIRING SHALL BE INSTALLED IN COMPLIANCE WITH THE CALIFORNIA ELECTRICAL CODE (SPECIFICALLY ARTICLE 760) AND NFPA 72, NATIONAL FIRE ALARM CODE.
- 8. NO WIRING SHALL BE EXPOSED. CONDUIT SHALL BE USED. WIRING WITHIN ENCLOSURES SHALL BE NEATLY BUNDLED AND STRAPPED OR FASTENED TO THE ENCLOSURE OR ENCLOSURE DOORS.

9. IN SUB-PANELS OR ENCLOSURE SURFACES, WIRING CONNECTED TO HINGED DOORS SHALL BE BUNDLED

- AND SLEEVED IN A FLEXIBLE PLASTIC TUBING TO PERMIT OPENING AND CLOSING OF THE DOOR WITHOUT STRAINING WIRING AND WITHOUT ABRASION OF WIRE INSULATION. 10. NO CABLE SHALL BE INSTALLED IN VENTILATION DUCTS OR PLENUMS WITHOUT SPECIFIC PRIOR WRITTEN
- APPROVAL OF THE UNIVERSITY'S REPRESENTATIVE.
- 11. NO CLASS 2 OR 3 SIGNAL WIRING SHALL BE INSTALLED IN CONDUIT WITH LIGHT, POWER, OR CLASS 1
- 12. ALL WIRING, EXCEPT WIRING INSIDE ENCLOSURES, SHALL BE CABLED WITH A THERMOPLASTIC INSULATION JACKET, WITH A VOLTAGE RATING EXCEEDING THE VOLTAGE OF ANY POWER IN PROXIMITY TO THE
- 13. ALL SIGNAL WIRING SHALL BE OPERATED AT NOT MORE THAN 30 VOLTS, AC OR DC.
- 14. ANY FIRE ALARM DEVICE LOCATED IN A CONCEALED LOCATION SHALL BE PROVIDED WITH A REMOTE ALARM INDICATOR. THE REMOTE ALARM INDICATOR SHALL BE LOCATED IN A READILY VISIBLE LOCATION IN THE VICINITY OF THE CONCEALED DEVICE.

SPECIAL DEMOLITION NOTES

THE EXISTING FIRE ALARM SYSTEM PROVIDING PROTECTION FOR THE BUILDING HAS BEEN PARTIALLY DEMOLISHED IN A PREVIOUS WORK SCOPE. UPON SUBSTANTIAL COMPLETION AND APPROVAL OF THE LBNL FIRE MARSHAL OF THE NEW (REPLACEMENT) FIRE ALARM SYSTEM, WITH THE EXCEPTION OF THE EXISTING SPOT HEAT DETECTORS, THE REMAINING ELEMENTS OF THE EXISTING SYSTEM SHALL BE REMOVED (INCLUDING THE TEMPORARY LINEAR HEAT DETECTION) AND ALL SURFACES RESTORED TO NEW CONDITION. EMBEDDED CONDUIT MAY REMAIN (WITH CONDUCTORS PULLED AS PART OF THIS WORK SCOPE). WITH THE EXCEPTION OF RACEWAYS AND CONDUCTORS, ALL FIRE ALARM EQUIPMENT REMOVED SHALL BE RÉTURNED TO THE UNIVERSITY. THE EXISTING SPOT HEAT DETECTORS SHALL REMAIN IN SERVICE.

SPECIAL HEAT DETECTION NOTES

THE LOCATIONS OF THE NEW SPOT HEAT DETECTORS SHOWN ARE BASED UPON A 09/02/09 WALK THROUGH, THE LOCATIONS AND APPROXIMATE NUMBER OF NEW SPOT HEAT DETECTORS SHALL BE CONFIRMED SO THAT AREA WIDE COVERAGE IS PROVIDED FOR THE BAY POCKETS FORMED BY BEAMS.

				FIRE	ALARM EQUIPMENT L	IST		
ATE- ORY	ITEM NO.	SYMBOL	QTY	MODEL NUMBER	DESCRIPTION	MANUFACTURER	DATA SHEET NUMBER	CALIFORNIA STATE FIRE MARSHAL LISTING NUMBER
	1		1	MLE-KIT	MLE-KIT (LARGE ENCLOSURE) CONSISTS OF:	SIEMENS	5056	7300-0067:017
	2				1 MBR-MP MODULE MOUNTING PLATE	SIEMENS	5056	7300-0067:017
	3				1 MBR-3MP CARDCAGE EXPANDER MOUNTING PLATE	SIEMENS	5056	7300-0067:017
	4				1 MLE-6 ENCLOSURE / DOOR PACKAGE	SIEMENS	5056	7300-0067:017
	5		1	MER-8	RIBBON CABLE ASSEMBLY	SIEMENS		
	6		1	MLE-CABLES	MLE-6 CABLES	SIEMENS		
ALARM CONTROL PANEL	7		1	MDL-1	CLEAR PLEXIGLAS LENS (Door Opening)	SIEMENS	5056	
NTROL	8		1	MDB-1	DEAD FRONT PANEL (Door Opening)	SIEMENS	5056	
RM CC	9		1	MKB-2	MXL DISPLAY / KEYPAD	SIEMENS	5026	7165-0067:014
fire ala	10		2	MHD-1	DEAD FRONT PANEL	SIEMENS	5056	7300-0067:017
I.	11	[5:05]	2	MHD-2	DEAD FRONT PANEL	SIEMENS	5056	7300-0067:017
MX	12	FACP	1	MMB-3	MXL MAIN CONTROL BOARD	SIEMENS	5079	7165-0067:014
	13		4	MOM-4	OPTION MODULE CARD CAGE	SIEMENS	5004	7300-0067:017
	14		1	ALD-2I NIM-1W	ANALOG LOOP DRIVER MODULE NETWORK INTERFACE MODULE	SIEMENS SIEMENS	5036 5072	7300-0067:017 7300-0067:017
	15 16		2	D2300CPS	FIBER OPTIC INTERFACE MODULE	SIEMENS	5080	7300-0067:017
	17		1	MXL-MFPO	FIBER MODULE MOUNTING PLATE	SIEMENS	5080	
	18		6	CSM-4	CONTROLLABLE SIGNAL MODULE	SIEMENS	5001	7165-0067:014
	19		1	CZM-4	CONVENTIONAL ZONE MODULE	SIEMENS	5003	7165-0067:014
	20		1	MPS-12	POWER SUPPLY w/ TRANSFORMER, 12 AMPS	SIEMENS	5000	7165-0067:014
	21		1	CP2341	SURGE SUPPRESSOR	SIEMENS		7300-0067:017
	22		2	PS-12550	55 AMP/HOUR BATTERY (12 VDC)	POWER SONIC		Not Applicable
	23		1	BB-55	BATTERY CABINET	SIEMENS	3326	7300-0067:017
듯	24	PSP	1	#AL600ULXR	POWER SUPPLY	ALTRONIX		7315–1335:010
SUPPLY	25	<u> </u>	2	PS-12180	18.0 AMP/HOUR BATTERY (12VDC)	POWER SONIC		Not Applicable
	26	TRI-R	55	TRI-R	INTERFACE MODULE, SINGLE INPUT w/RELAY	SIEMENS	6179	7300-0067:014
	27	TRI-D	11	TRI-D	INTERFACE MODULE, DUAL INPUT	SIEMENS	6179	7300-0067:014
	28	TRI-S	7	TRI-S	INTERFACE MODULE, SINGLE INPUT	SIEMENS	6179	7300-0067:014
	29	TRI-M	14	TRI-B6M	INTERFACE MODULE, SINGLE INPUT (MINIATURE)	SIEMENS	6179	7300-0067:014
VICES	30		13	MSM-KD	MANUAL STATION, METAL w/KEY, DOUBLE ACTION	SIEMENS	6184	7150-0067:021
FIELD DEVICES	31		13	MSM-BOX	SURFACE BACKBOX FOR MSM-SERIES MANUAL STATIONS	SIEMENS	6184	7450 0007.004
분	32	WP	1	MSM-KD-WP MSM-BOX	MANUAL STATION, METAL w/KEY, WEATHERPROOF DOUBLE ACTION SURFACE BACKBOX FOR MSM-SERIES MANUAL STATIONS	SIEMENS SIEMENS	6184	7150-0067:021
	33	WF	24	FP-11	INTELLIGENT PHOTOELECTRIC SMOKE DETECTOR	SIEMENS	6175	7272-0067:020
	35	③	24	DB-11	DETECTOR BASE FOR FP-11 DETECTOR	SIEMENS	6175	7300-0067:013
	36		117	FPT-11	INTELLIGENT THERMAL FIRE DETECTOR (DETECTORS ON CEILING)	SIEMENS	6176	7270-0067:020
	37	•	117	DB-11	DETECTOR BASE FOR FP-11 DETECTOR	SIEMENS	6176	7300-0067:013
	38		17	FP-11	INTELLIGENT PHOTOELECTRIC SMOKE DETECTOR	SIEMENS	6175	7272-0067:020
	39	<u> </u>	17	AD2-P	AIR DUCT HOUSING	SIEMENS	6185	3240-0067:024
	40		17	ST-50	DUCT DETECTOR SAMPLING TUBE	SIEMENS	6185	
	41				MULTI CANDELA STROBE, 15cd (Red) Wall Mtd.	SIEMENS	2584	7125-0067:025
	42	Ā	23	ZR-MC-R	MULTI CANDELA STROBE, 30cd (Red) Wall Mtd.	SIEMENS	2584	7125-0067:025
	43	~			MULTI CANDELA STROBE, 75cd (Red) Wall Mtd.	SIEMENS	2584	7125-0067:025
	44				MULTI CANDELA STROBE, 110cd (Red) Wall Mtd.	SIEMENS	2584	7125-0067:025
	45				MULTI CANDELA HORN/STROBE, 15CD (Red) Wall Mtd.	SIEMENS	2584	7125-0067:024
	46	ğ	81	ZH-MC-R	MULTI CANDELA HORN/STROBE, 30CD (Red) Wall Mtd	SIEMENS	2584	7125-0067:024
	47				MULTI CANDELA HORN/STROBE, 75CD (Red) Wall Mtd	SIEMENS	2584	7125-0067:024
	48		1	AC 75 D WD	MULTI CANDELA HORN/STROBE, 110CD (Red) Wall Mtd.	SIEMENS SIEMENS	2584	7125-0067:024
	49 50	薆	1	AS-75-R-WP WPBBS-R	WEATHERPROOF HORN/STROBE, (Red) Wall Mtd. WEATHERPROOF BACKBOX	SIEMENS	2578 2585	7125-0067:024
	51	<u> </u>	6	FM-998	TRI-VOLT MAGNETIC DOOR HOLDER (24VDC)	RIXSON		3550-0047:000
	52		6	ILP-1	INTELLIGENT PHOTOELECTRIC DETECTOR	SIEMENS	6164	7272-0067:0162
	53	4- /	6	AD-3ILP	DUCT DETECTOR HOUSING	SIEMENS	6124	3240-0067:0116
	54	∫ (T) WP	6	EAD-3	WEATHERPROOF ENCLOSURE	SIEMENS	6124	
	55		6	STA-10	DUCT DETECTOR SAMPLING TUBE	SIEMENS	6124	
	56	DSC	11	DSC	DUAL SYNCHRONIZATION CONTROL MODULE	SIEMENS	2553	7300-0067:021
	57	(2)	2	FP-11	INTELLIGENT PHOTOELECTRIC SMOKE DETECTOR	SIEMENS	6175	7272-0067:020
	58	® _{RB}	2	DB-X11RS	DETECTOR BASE W/RELAY FOR FP-11 DETECTOR	SIEMENS	6175	7300-0067:013
	59				MULTI CANDELA HORN/STROBE, 15cd (Red) Ceiling Mtd.	SIEMENS	2584	7125-0067:024
	60	⊠c	1	ZH-MC-CR	MULTI CANDELA HORN/STROBE, 30cd (Red) Ceiling Mtd.	SIEMENS	2584	7125-0067:024
	61	<u>~</u> ℃			MULTI CANDELA HORN/STROBE, 75cd (Red) Ceiling Mtd.	SIEMENS	2584	7125-0067:024
	62		_		MULTI CANDELA HORN/STROBE, 95cd (Red) Ceiling Mtd. 1000FT PROTECTOWIRE LINEAR HEAT DETECTOR-135'F RATING	SIEMENS	2584	7125-0067:024
	63	—_LHD—	2	PHSC-135-XLT PHSC-135-XLT	(DETECTOR ABOVE CEILING) 500FT PROTECTOWIRE LINEAR HEAT DETECTOR—135°F RATING	PROTECTOWIRE PROTECTOWIRE		7270-0854-010 7270-0854-010
	64 65		18	SR 502	(DETECTOR ABOVE CEILING) SERIES STRAIN RELIEF CONNECTORS	PROTECTOWIRE		, _, u = uuu4=UI(
	66	J	18	ZB-4-QC-MP	JUNCTION BOX	PROTECTOWIRE		
	67	EL	9	ELR-HD-1A-QC	END OF LINE WITH TEST SWITCH	PROTECTOWIRE		
	68	CZM	10	CZM-1B6	REMOTE CONVENTIONAL ZONE MODULE	SIEMENS	5066	7300-0067:017
	69			\/[I
	70			VE	SDA EQUIPMENT LIST			
	71) HSSD	3	VLP-012	VESDA LASER PLUS DETECTOR	SIEMENS	1173	7259-1491:010
	72	VPS	2	VPS-300US-120	VESDA POWER SUPPLY WITH BATTERY CABINET (VBC-001)	SIEMENS	1170	7315–1491:010
	73	VFS	8	VBT-012	12 VDC BATTERY (12 AMP-HOUR)	SIEMENS	1170	
	74	_	3	VP-P-420	PIPE-3/4" (QTY-28 OF 15FT LENGTHS)	SIEMENS		
	75		2	VP-COUP	COUPLINGS-3/4" (15 PER BOX)	SIEMENS		
	76		5	VP-ELB-90	90 DEGREES ELBOW-3/4" (20 PER BOX)	SIEMENS		
	77		1	VP-UNION	UNIONS-3/4" (10 PER BOX)	SIEMENS		
	78		3	VP-TEE	TEE (QTY-15)	SIEMENS		
	79		2	VP-EC	END CAP-3/4" (25 PER BOX)	SIEMENS		
	80		2	VP-CEMENT	SOLVENT CEMENT (1 PINT)	SIEMENS		
	81		38 38	E-700-CAP E-700-SP	CONNECTOR KIT CAPILLARY (MINIATURE) SAMPLING POINT	SIEMENS		
	82		ე <u>წ</u>	TUBING-250	CAPILLARY (MINIATURE) SAMPLING POINT CAPILLARY TUBING 3/8"ID, FPE RATED (250FT ROLL)	SIEMENS SIEMENS		
	84		4	E-700-SPLG	CAPILLARY MINI SAMPLING TUBE LABELS (RED) 12	SIEMENS		
	85		1	E-700-SP-DCL-PT	SAMPLING POINT DECAL (WRAP AROUND STYLE-50 PER ROLL)	SIEMENS		
	86		4	VP-TEE-FPT	CAPILLARY TUBING TEE (QTY-10)	SIEMENS		
	87		1	CSD20208W	VESDA ENCLOSURE	HOFFMAN		
	88		1	сwнк	KEYLOCK HANDLE	HOFFMAN		
	89		1	CP2020	MOUNTING PLATE	HOFFMAN		
	90	O			JUNCTION BOX	BY OTHERS		
IATION	91	\Diamond			WATERFLOW SWITCH	BY OTHERS		
	92	\Q			VALVE POSITION SUPERVISORY SWITCH	BY OTHERS		

END-OF-LINE DEVICE (VALUE AS SPECIFIED)

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FSD

BY OTHERS

BY OTHERS

DRAWING AND DESIGN HEREIN SHALL NOT BE CUPLICAT SED OR DISCLOSED TO OTHERS FOR PROCUREMENT OR CT URPOSE (EXCEPT AS OTHERWISE AUTHORIZED BY CONTR. WITHOUT WRITTEN PERMISSION OF SIEMENS BUILDING TECHNO LOGIES, INC., FIRE SAFETY DIVISION, ALL OTHER REPRODUCTIONS SHALL BEAR THIS NOTICE.

REVISIONS JPM 9/20/10 KW RESPONSE TO HYT BULLETIN 5 JPM 10/19/10 KW 5A REVIEW COMMENTS JPM 10/25/10 KW MARSHALS' COMMENTS | JPM | 6/8/11 | KW REVIEW COMMENTS JPM 9/20/12 KW

SIGNER OF CONTRACT DOCUMENTS:



INSTALLATION CONTRACTORS NAME & ADDRESS:

W. BRADLEY ELECTRIC, INC.

90 Hill Road, Novato, CA 94945

Tel (415) 898-1400 Fax (415) 898-5991

25821 Industrial Boulevard, Suite 300 Hayward, California 94545-2991 Tel (510) 783-6000 Fax (510) 293-2100 California State C10 License No. 758796 U.L. Certificate ID No. 324787-001

B NAME & LOCATION (STREET ADDRESS)

UNIVERSITY OF CALIFORNIA UNIVERSITY OF CALIFORNIA
LAWRENCE BERKELEY NATIONAL LABORATORY
BERKELEY LAB FACILITIES DIVISION

> BUILDING 74 FIRE ALARM

LBNL SEISMIC PHASE 2

One Cyclotron Road, Berkeley, California 94720

NEW INSTALLATION □ DESIGN/BUILD PER CONTRACT DOCUMENT EXISTING BASE JOB # ___ OTHERS ___

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